Aruba Certified Switching Associate
OFFICIAL CERTIFICATION STUDY GUIDE (EXAM HPE6-A72)

First Edition

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About the Authors

The material in this Study Guide was developed by Alvaro Tellez and Ricardo Cobos who created the Aruba OS-CX Switching Fundamentals, Rev. 20.21, training course. Alvaro is an Aruba Certified Instructor, ACMX, ACCP, and ACSP certified. Ricardo is an Aruba Certified Instructor, Aruba Certified Edge Expert (ACCX, ACMX, and ACDX), and ACSP certified.

About the Technical Editor

Tyler McMinn is an HPE Aruba Instructor with eleven years of experience and a background in switching, routing, data center, collaboration, design, security and wireless networks.

Introduction

This book is based on the Aruba OS-CX Switching Fundamentals, Rev. 20.21 five-day course. The material covers the fundamental skills to configure and manage modern, open standards-based wired networking solutions for small-to-midsized businesses (SMBs) and campus networks. Topics include VLANs, secure access, redundancy technologies, Aruba's Virtual Switching Framework (VSF), and more.

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Audience

This book is designed for network administrators tasked with implementing Aruba OS-CX switch networks. Ideal candidates for this course are networking IT professionals with an introductory level of experience in deploying small-to-medium scale network solutions.

Assumed Knowledge

This is an entry-level book and certification. Any basic knowledge of switch networking will serve to aid in your understanding of the material but is not required.

Minimum Qualifications

There are no prerequisite qualifications for the ACSA certification.

Relevant Certifications

After you pass the exam, your achievement may be applicable toward more than one certification. To determine which certifications can be credited with this achievement, log in to The Learning Center and view the certifications listed on the exam's More Details tab. You might be on your way to achieving additional certifications.

Preparing for Exam HPE6-A72

This self-study guide does not guarantee that you will have all the knowledge you need to pass the exam. It is expected that you will also draw on real-world experience and would benefit from completing the hands-on lab activities provided in the instructor-led training. To pass the certification exam, you should get as much hands-on experience as possible.

Recommended HPE Training

Recommended training to prepare for each exam is accessible from the exam's page in The Learning Center. See the exam attachment, "Supporting courses," to view and register for the courses.

Obtain Hands-on Experience

You are not required to take the recommended, supported courses, and completion of training does not guarantee that you will pass the exams. Hewlett Packard Enterprise strongly recommends a combination of training, thorough review of courseware and additional study references, and sufficient on-the-job experience prior to taking an exam.

Exam Registration

To register for an exam, go to
https://certification-learning.hpe.com/tr/learn_more_about_exams.html

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1 Networking Fundamentals

EXAM OBJECTIVES

- ✓ Describe computing networks
- ✓ Describe protocols and the OSI model
- ✓ Explain encapsulation and headers
- ✓ Convert numbering systems: decimal, binary, and hexadecimal
- ✓ Describe the TCP/IP protocol stack
- ✓ Compare unicast, multicast, and broadcast

Basic Network Concepts

After completing this chapter, you will be familiar with the fundamental concepts that serve as a foundation for mastering computer network technology.

What is a Computing Network?

A computing network is defined as a group of computing resources that permit digital data exchange between computer devices—regardless of the type or vendor (Figure 1-1).

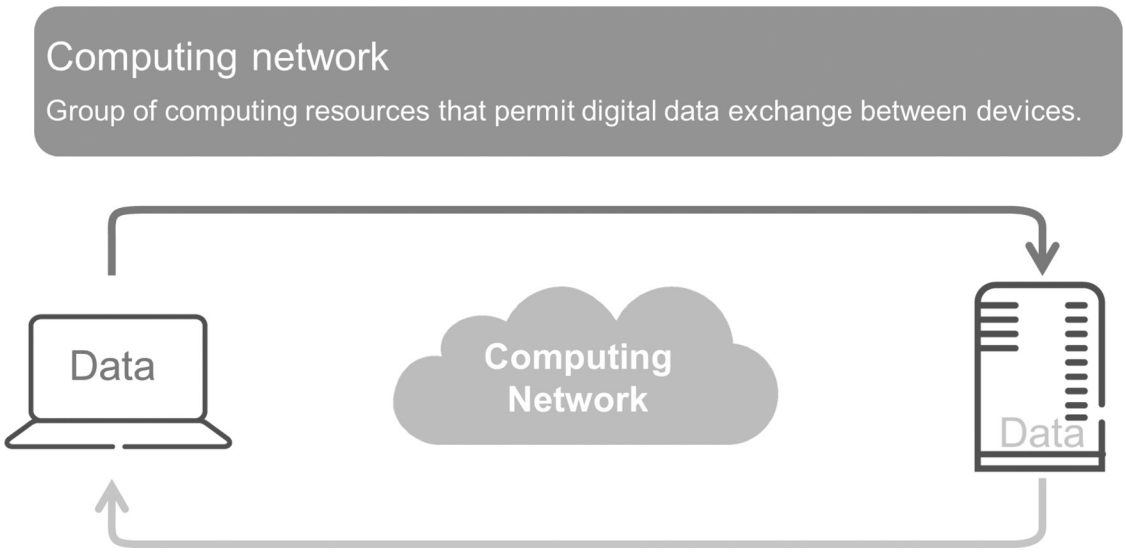

Figure 1-1 Computing Network

Network Classifications

Based on the geographical coverage a computing network can be categorized as a Local Area Network (LAN) or a Wide Area Network (WAN). A **LAN** is a group of computer devices that are geographically co-located in the same place. For example, a group of devices within a building can be considered a LAN.

LANs are used in several settings:

- Small Office/Home Office (SOHO)
- Office LANs
- Building LANs
- Campus LANs

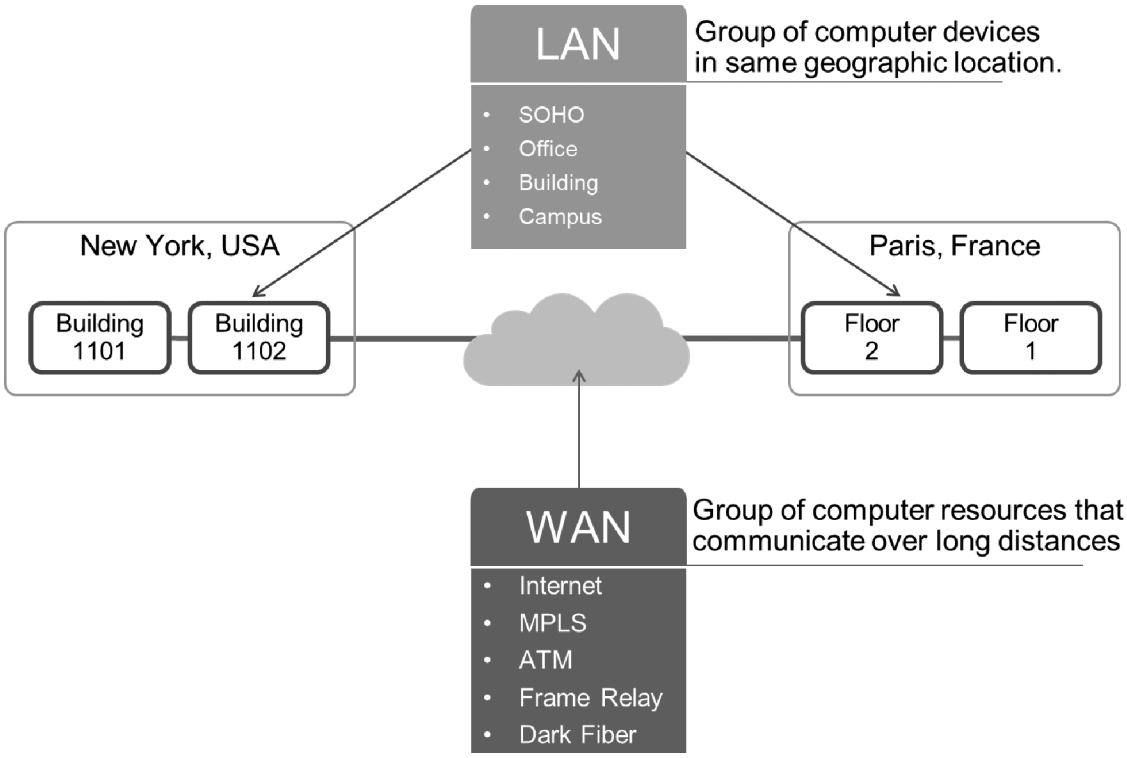

Figure 1-2 Classification

A **WAN** on the other hand is a group of computer resources that can communicate over large geographical distances—typically a few kilometers or miles, and perhaps thousands of miles, such as the Internet. The Internet is considered a WAN since it permits communication across countries and continents (Figure 1-2).

Typically, WANs are deployed by Internet Service Providers (ISP) since those companies have the economic resources to interconnect long distances. Examples of WAN technologies include the following:

- Internet
- Multi-Protocol Label Switching (MPLS)
- Asynchronous Transfer Mode (ATM)
- Frame Relay (largely obsolete)
- Dark fiber